

Claims

[c]

1.A method, comprising:

forming a bulk metallic glass, of a plurality of materials forming an alloy, said alloy being a non Be containing alloy; and

stabilizing one of a plurality of phases of said alloy relative to another of said phases.

[c]

2.A method as in claim 1, wherein said stabilizing comprises adjusting ratios between components of said alloy.

[c]

3.A method as in claim 1, wherein said plurality of materials include Zr, Nb, Cu, Ni, and Al.

[c]

4.A method as in claim 3, wherein said alloy is

$\text{Zr}_{58.47}\text{Nb}_{2.76}\text{Cu}_{15.4}\text{Ni}_{12.6}\text{Al}_{10.37}$

5.A method, comprising:

forming a bulk metallic glass, of a plurality of materials forming an alloy having said plurality of materials having Zr, Nb, Cu, Ni, and Al; and

adjusting ratios between said plurality of materials to stabilize one phase of said alloy relative to another.

[c]

6. A method as in claim 5, wherein said alloy is $\text{Zr}_{58.47}\text{Nb}_{2.76}\text{Cu}_{15.4}\text{Ni}_{12.6}\text{Al}_{10.37}$.

7.A method, comprising:

forming a bulk metallic glass of the form $Zr_{57+\delta/2}Nb_{5-\delta}Cu_{15.4}Ni_{12.6}Al_{10+\delta/2}$

, where δ is nonzero.

[c]

8. A method as in claim 7, where δ is between 2 and 3.

[c]

9. A method as in claim 7, where δ is less than 1 but greater than 0.

[c]

10. A method as in claim 7, where δ is between 0.25 and 0.75.

[c]

11. A method comprising:

forming a bulk metallic glass of the form $Zr_{58.47}Nb_{2.76}Cu_{15.4}Ni_{12.6}Al_{10.37}$.

12. A bulk metallic glass of the form $Zr_{58.47}Nb_{2.76}Cu_{15.4}Ni_{12.6}Al_{10.37}$.

[c]

13. A method comprising:

determining information about competing formation phases of a bulk metallic glass;
and

changing a ratio between components of said bulk metallic glass to stabilize one of said
formation phases relative to another of said formation phases.

[c]

14. A method as in claim 13, wherein said components include Zr, Nb, Cu, Ni, and Al.

[c]

15. A method as in claim 13, wherein said ratio is changed as form $Zr_{57+\delta/2}Nb_{5-\delta}Cu_{15.4}Ni_{12.6}Al_{10+\delta/2}$

, where δ is nonzero.